United States Department of the Interior
NATIONAL PARK SERVICE

Glacier Bay National Park and Preserve
P.O. Box 140
Gustavus, Alaska 99826-0140

IN REPLY REFER TO:

Glacier Bay National Park & Preserve
Marine Vessel Emissions Program

Purpose

The purpose of the Marine Vessel Emissions Program at Glacier Bay National Park & Preserve is to ensure that the impact on air quality by large passenger-carrying vessels in Glacier Bay is minimized. This is achieved, in part, through compliance with visible emissions standards. Air quality is important for the health of natural resources and aesthetic qualities of Glacier Bay. Clear vistas unimpaired by air pollution are also an expectation of the hundreds of thousands of visitors who come to the park each year.

History

The National Park Service (NPS) has conducted emissions readings on marine vessels in Glacier Bay since 1991. From 1991 through 1996, emissions readings were conducted pursuant to a cooperative agreement with the State of Alaska, Department of Environmental Conservation, Air Quality Control Division. Park Ranger staff were certified as Visible Emissions Evaluators using the EPA Method 9 procedures to monitor smoke stack emissions. The cooperative agreement facilitated interagency training, program consistency, and enabled readings by NPS monitors to be used as part of the state's overall visible emissions monitoring and compliance program.

In 1996, NPS promulgated a regulation for GBNPP articulating marine vessel emissions standards (36 CFR 13.65 (b)(4)). Prior to 1996, NPS did not have a specific opacity regulation. The NPS regulation developed in conjunction with the park's Vessel Management Plan (VMP), essentially mirrored portions of existing state regulations. It is intended, as part of an overall pollution minimization effort, to mitigate the potential environmental effects resulting from the increased number of passenger vessels authorized to enter Glacier Bay.

Regulation

36 CFR 13.65 (b)(4) states:

(4) *"Marine vessel visible emission standards*: Visible emissions from a marine vessel, excluding condensed water vapor, may not result in a reduction of visibility through the exhaust effluent of greater than 20% for a period or periods aggregating more than:

(i) three minutes in any one hour while underway, at berth, or at anchor; or
(ii) six minutes in any one hour during initial startup of diesel-driven vessels; or
(iii) 12 minutes in one hour while anchoring, berthing, getting underway or maneuvering in Bartlett Cove."

Monitoring Methodology

I. Standards
   A. Emissions readers
      1. Commissioned Law Enforcement Ranger
      2. Current certification as EPA Method 9 Visible Emissions Evaluator.
   B. Park interpretive and protection staff
      1. Have been given orientation by an emissions reader in
         a. how the program works
         b. what are the park's opacity standards
         c. what to do if a complaint is received
         d. what to do if they observe a possible violation

I. Emissions Reader Responsibilities
   A. Maintain valid certification
   B. Obtain cruise ship schedules
   C. Respond to emissions complaints
   D. Conduct vessel opacity readings
   E. Record/document readings on required forms
   F. Notification of operator following reading
   G. Compile data, distribute report to supervisor, Concessions Management Specialist
   H. Maintain emissions file.
   I. Work with cooperating agencies and vessel operators
   J. Use and maintain necessary equipment
   K. Orient Interpretive and Protection staff in program basics, how to document a complaint.

II. Monitoring

A. EPA Method 9 guidelines

1. Currently certified Visible Emissions Evaluator
2. Sun within a 140-degree sector to reader's back
3. Reading location is at least three stack heights, but not more than a quarter mile from the stack.
4. Read from where the line of sight is at right angles to the wind direction.
5. Line of sight perpendicular to the longer axis of the opening.
6. Photos may be taken before or after, but not during a reading.
7. Do not look continuously at the plume (this causes eye fatigue).
8. Observe and record observation every 15 seconds.
9. Pick a reading location with a clearly visible background of contrasting color.
10. Read at the point in the plume with the greatest opacity.
11. Read only the unfolded portion of plume when in wind conditions.
12. The Method 9 standard deviation is 7.5%

B. Glacier Bay specifics

1. Reading may occur either at a fixed point on land, on the water, or from a moving vessel.
2. Vessel speed to, as closely as possible, match that of the vessel being read.
3. Suggested reading locations:
   a. Lone Island to Tidal Inlet - against the east shoreline
   b. Tarr Inlet - entrance to glaciers
   c. Tarr Inlet - against Margerie Glacier
   Other areas - Against white clouds if dark smoke, avoid gray clouds or gray rock as a backdrop.

Compliance Process

I. General Procedures

NPS will attempt to read each cruise ship entering the bay a minimum of two times during each operating season. Tour vessels may also be read. All readings will be documented, and the vessel operator notified by radio following the reading. For ship's tracking and educational purposes, the

reader may notify the vessel operator immediately prior to the reading. Where the opacity regulations are exceeded, the reader will document the observation and, as soon as is practical, notify the vessel operator, District Ranger, and Concessions Management Specialist. To handle violations, NPS may address opacity compliance through administrative or criminal procedures. NPS will evaluate the circumstances surrounding each reading to determine which procedure to follow. Third party complaints will be investigated by the emissions reader, and followed up with notification to the District Ranger, Concessions Management Specialist, and possibly ADEC.

II. Administrative Process

A. Certified Reader observes a ship operating out of compliance with emissions standard.

B. Reader documents observation and notifies key park personnel and vessel operator.

C. Operator may submit a Corrective Action Report within 48 hours of notification to explain why the excessive stack emissions may have occurred.

1. Corrective Action Report (CAR)
The CAR should assess problems and identify solutions in order to prevent future excess emissions. The CAR may also identify any conditions that were beyond the vessel operator's control which may have caused or contributed to the excess emissions incident, including:

a) unanticipated equipment malfunction or breakdown;

To satisfy a condition under (a) above, the vessel operator must show that:

1) to the maximum extent practicable the air pollution control equipment, process equipment, or processes were maintained and operated in a manner consistent with good practice for minimizing emissions;

2) Repairs were made in an expeditious fashion when the operator knew or should have known that applicable emission limitations were being exceeded. Off-shift labor and overtime must have been utilized, to the extent

practicable, to ensure that such repairs were made as expeditiously as practicable;

3) the amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions;

4) all possible steps were taken to minimize the impact of the excess emissions on all ambient air quality; and

5) The excess emissions are not part of a recurring pattern indicative of the inadequate design, operation, or maintenance.

b) Or, maneuvering to avoid navigational hazards which pose an imminent threat to the safety of the vessel, its crew and passengers, or other vessels.

To satisfy a condition under (b) above, the Master, Duty Officer, and/or State Licensed Marine Pilot must document, through operating logs, the navigational hazard.

D. The Superintendent will review the Emissions Reader's report and the CAR (if submitted). Unless it is determined that acceptable mitigating circumstances exist, the exceedance will be considered a violation of record for the specific ship for the purposes of the operator's concessions permit. NPS concessions permits for vessels operating in the park require, as a condition of the permit, compliance with all applicable state and federal regulations.

E. Should a violation of record be determined, written notification will be given to the vessel operator.

F. One violation of record will result in the recommendation to the Superintendent that the operator's annual evaluation be rated as "marginal".

G. A second violation of record by the same ship, within three years of the first, will result in the

recommendation to the Superintendent that the ship involved not be allowed to re-enter the Bay.

H. Each violation is subject to review by the Park Superintendent, and may result in immediate revocation of the concessions permit, thereby prohibiting the offending ship from operating in Glacier Bay.

III. Criminal Process

A. NPS has the authority to issue a Violation Notice in any case of non-compliance with the park emissions regulation.

B. A violation of 36 CFR 13.65 (b)(4) is a Class B Misdemeanor, punishable by a fine of up to $10,000 and/or 6 months in jail.

C. A Violation Notice or Complaint will be issued to the operator of the vessel.

D. Because the U.S. District Court has not established a bail schedule for violation of these regulations, each violation will require an appearance before a U.S. District Court Judge or U.S. Magistrate Judge.

E. Administrative actions, in accordance with the terms of the concessions permit, may follow as a result of a conviction.

F. One conviction, as a minimum, will result in the operator's annual evaluation being rated as "marginal".

G. A second conviction involving the same ship, within three years of the first, will result in the recommendation to the Superintendent that the ship not be allowed to re-enter the bay.

H. The Superintendent, as a result of an operator's conviction, may revoke the concessions permit, thereby prohibiting the offending ship from operating in Glacier Bay.

IV. Third-Party Complaints

A. All air quality complaints will be documented in writing, if possible, on a standard visitor comment form and/or an NPS Case Incident form.

B. The following information should be included in the documentation:

1. Time and date of occurrence
2. Specific observation (color of smoke, where the vessel was observed, shape of plume, action of vessel, etc.)
3. Ship involved

4. Name, Address, Phone of observer (on separate page)
5. Name, Address, Phone of other witnesses (on separate page)

C. Emissions Reader to investigate the complaint.
D. Information obtained is to be forwarded to the District Ranger and Concessions Management Specialist and potentially, Alaska DEC.
E. Concessions Management Specialist will notify the operator regarding the complaint.
F. If possible, the ship involved will be read during its next entry.

Approved By:

Tomie Patrick Lee
Superintendent

August 9, 1999
Date